

Listing of claims

1. (currently amended): A method for acquiring images using an automated optical microscope system, comprising the steps of:

configuring an optical microscope system which comprises a camera **having a photosensitive surface and providing an output image representing a frame as a sequence of electrical signals**, a microscope **adapted to expose one optical image on the photosensitive surface of the camera for conversion to one output image representing one frame**, an information handling system and a device for altering an image acquisition parameter;

acquiring **members of a stack of output** images at a rate **equal to or** less than and substantially close to the maximum image acquisition rate of said camera; and

altering, during image acquisition, at least one image acquisition parameter which applies to the next image;

wherein the configuring step comprises initializing a range of values over which said image acquisition parameters will vary during the acquiring of images.

2. (original): The method of claim 1, where the at least one image acquisition parameter being altered is focus plane, light intensity, excitation wavelength or emission wavelength.

3. (original): The method of claim 2, wherein the at least one image acquisition parameter being altered during image acquisition is excitation wavelength or emission wavelength, whereby a stack of fluorescence images is acquired.

4. (original): The method of claim 1, wherein the configuring step further comprises initializing a duration of time during which images will be acquired.

5. (original): The method of claim 1, wherein, during acquisition of at least one image, more than one image acquisition parameter which applies to the next image is altered.

6. (original): The method of claim 5, wherein, during acquisition of at least one image, excitation wavelength and emission wavelength which apply to the next image are altered.

7. (original): The method of claim 1, wherein the information handling system comprises a memory,

further comprising the step of storing a stack of images in the memory.

8. (original): An automated optical microscope system programmed to contain a computer program product that executes the steps of claim 7, comprising:

a microscope,

a camera,

an information handling system comprising a memory, and

a device for altering one or more of the image acquisition parameters of focus plane, excitation wavelength or emission wavelength.

9. (original): An automated optical microscope system programmed to contain a computer program product that executes the steps of claim 1, comprising:

a microscope,

a camera,

an information handling system, and

a device for altering one or more of the image acquisition parameters of focus plane, excitation wavelength or emission wavelength.

10. (original): The automated optical microscope system of claim 9, wherein the microscope comprises an objective lens and an objective lens positioner, and

wherein the computer program product contains programming for directing the objective lens positioner to reposition the objective lens between images.

11. (original): The automated optical microscope system of claim 9,

wherein the microscope comprises an examination site and an examination site positioner, and

wherein the computer program product contains programming for directing the examination site positioner to reposition the examination site between images.

12. (original): The automated optical microscope system of claim 9, wherein the microscope comprises a wavelength selector for selecting the excitation wavelength or emission wavelength or both, and

wherein the computer program product contains programming for directing the wavelength selector to re-select excitation wavelength or emission wavelength or both between images.

13. (original): The automated optical microscope system of claim 12, wherein the wavelength selector is a monochromator.

14. (original): The automated optical microscope system of claim 12, wherein the wavelength selector is a filter wheel.

15. (original): The automated optical microscope system of claim 9, wherein the microscope comprises a shutter and

wherein the computer program product contains programming for controlling the shutter.

16-30. (canceled)

31. (previously presented): The method of claim 1, wherein the altering step occurs during inter-frame time.